642

MATERIAL SAFETY DATA SHEET

CE 1907/2006 (REACH)

Revision: 642-QD3 *Edition: 28/10/2013* Cancel and replace 642-QD2, 20/04/2012

1. Identification of the substance/preparation and the company

Product name: PROPYLENE GLYCOL USP

Additional data:

Synonyms:
propane-1,2-diol
1,2-propanediol
alpha-propylene glycol
MPG
REACH Registration number : 01-2119456809-23-XXXX
Product type REACH : Substance/mono-constituent (Organic)
CAS number : 57-55-6
EC number : 200-338-0
Molecular mass : 76.10 g/mol
Formula : C3H8O2

Company identification:

Pink Mule SL
Calle Real 6-8
06670 Herrera Del Duque
Badajoz
ES Spain

Emergency phone:

0034 924652075 - 0034 924652072

2. Hazards identification

Classification of the substance or mixture :

Classification according to Regulation EC No 1272/2008
Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Classification according to Directive 67/548/EEC-1999/45/EC
Not classified as dangerous according to the criteria of directive (s) 67/548/EEC and/or 1999/45/EC

Label elements :
CLP
Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

DSD/DPD
Not classified as dangerous in compliance with Directive 67/548/EEC and/or Directive 1999/45/EC

3. Composition/information on ingredients

Substances :

Name (	CAS No	Conc.	Classification	Classification	Note	Remark

REACH Registration No)	EC-No		according to DSD/ DPD	according to CLP		
propane-1,2-diol (01-2119456809-23)	57-55-6 200-338-0	>99 %			(2)	Mono-constituent

(2) Substance with a Community workplace exposure limit

4. First-aid measures

Description of first aid measures :

General:
Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised.
Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Alcohol consumption increases the toxicity.

After inhalation :
Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact :
Rinse with water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

After eye contact :
Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

After ingestion :
Rinse mouth with water. Consult a doctor/medical service if you feel unwell.

Most important symptoms and effects , both acute and delayed :

Acute symptoms
If applicable and available it will be listed below.

After inhalation :
EXPOSURE TO HIGH CONCENTRATIONS:. Dry/sore throat.

After skin contact :
Slight irritation. ON CONTINUOUS EXPOSURE/CONTACT:. Red skin. Dry skin.

After eye contact :
Redness of the eye tissue. Slight irritation.

After ingestion :
AFTER ABSORPTION OF HIGH QUANTITIES:. Nausea. Abdominal pain.

Delayed symptoms
If applicable and available it will be listed below.

Indication of any immediate medical attention and special treatment needed :
If applicable and available it will be listed below.

5. Fire-fighting measures

Extinguishing media :

Suitable extinguishing media :
Carbon dioxide. Water spray. BC powder. Preferably: alcohol resistant foam.

Unsuitable extinguishing media :
Container may slop over if solid jet (water/foam) is applied.

Special hazards arising from the substance or mixture :

Upon combustion CO and CO2 are formed.

Advice for firefighters :
Instructions :
Cool tanks/drums with water spray/remove them into safety.

Special protective equipment for fire -fighters:
Heat/fire exposure: compressed air/oxygen apparatus. Gloves. Protective clothing.

6. Accidental release measures

Personal precautions , protective equipment and emergency procedures :
For non-emergency personnel
See heading 8.2

For emergency responders
General
Gloves
Protective clothing

Suitable protective clothing
butyl rubber
natural rubber
polyethylene
PVC
polyethylene/ethylenevinylalcohol

Unsuitable protective clothing
No data available

Environmental precautions :
Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. .

Methods and material for containment and cleaning up :
Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Reference to other sections :
See heading 13.

7. Handling and storage

Precautions for safe handling :
Keep away from naked flames/heat. At temp>flashpoint: use spark-/explosionproof appliances. Finely divided: spark- and explosionproof appliances.
Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed.

Conditions for safe storage , including any incompatibilities :
Safe storage requirements :
Store in a dry area. Ventilation at floor level. Store at ambient temperature. Keep out of direct sunlight. Meet the legal requirements.

Keep away from :
Oxidizing agents, reducing agents, (strong) acids, water/moisture.

Suitable packaging material :
Steel with plastic inner lining, stainless steel, carbon steel, aluminium, copper, nickel, bronze.

Non suitable packaging material :
No data available

Specific end use (s):
If applicable and available, exposure scenarios are attached in annex. See information supplied by the

manufacturer .

8. Exposure controls/Personal protection

Control parameters :

Occupational exposure

If limit values are applicable and available these will be listed below .

a) Occupational exposure limit values

Limit Value (UK)

Propane-1,2-diol (total(vapour and part.) and particulates	Short time value	- ppm - mg/m³
	Time-weighted average exposure limit	- P/150 T ppm 10 P/474 T mg/m³

b) National biological limit values

If limit values are applicable and available these will be listed below .

Sampling methods

Product name	Test	Number	Remarks	Sampling method
Propylene Glycol	OSHA	CSI		
Propylene Glycol	NIOSH	5523		adsorption tubes

Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below .

DNEL/PNEC values

Acute: systemic/local effects workers

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	186 mg/m³	
	Long-term local effects inhalation	10 mg/m³	

Acute: systemic/local effects general population

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	50 mg/m³	
	Long-term local effects inhalation	10 mg/m³	

PNEC

Compartments	Value	Remark
FRESH WATER	206 mg/l	
MARINE WATER	26 mg/l	
Fresh water sediment	572 mg/kg sediment dw	
Marine water sediment	57.2 mg/kg sediment dw	
SOIL	50 mg/kg soil dw	
STP	20000 mg/l	

Control banding

If applicable and available it will be listed below .

Exposure controls :

The information in this section is a general description . If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use .

Appropriate engineering controls

Observe normal hygiene standards
Keep container tightly closed
Do not eat, drink or smoke during work
Keep away from naked flames/heat
At temp>flashpoint: use spark-/explosionproof appliances
Finely divided: spark- and explosionproof appliances
Finely divided: keep away from ignition sources/sparks

Individual protection measures , such as personal protective equipment
a) Respiratory protection:
Respiratory protection not required in normal conditions

b) Hand protection:
Gloves
- materials for protective clothing (excellent resistance)
No data available
- materials for protective clothing (good resistance)
butyl rubber
natural rubber
polyethylene
PVC
polyethylene/ethylenevinylalcohol
- materials for protective clothing (less resistance)
No data available
- materials for protective clothing (poor resistance)
No data available

c) Eye protection:
Safety glasses

d) Skin protection:
Protective clothing

Environmental exposure controls :
See headings 6.2, 6.3 and 13

9. Physical and chemical properties

Information on basic physical and chemical properties :

Physical form	Liquid			
Odour	Almost odourless			
Odour threshold	No data available			
Colour	Colourless			
Particle size	Not applicable			
Flammability	Non-flammable			
Explosion limits	No data available			
Log Pow	-1.07		Test data	
Dynamic viscosity	0.0434 Pa.s	25 °C		
Melting point	<-20 °C	Test data		
Boiling point	184 °C	1003.2 hPa		
Flash point	104 °C	Test data	1000.1 hPa	
Relative evaporation rate to ether	No data available			
Vapour pressure	0.2 hPa	20 °C	Test data	
Relative vapour density	2.6			
Solubility	water			Complete
	ethanol			Complete
	acetone			Complete
	ether	12 g/100 ml		
Relative density	1.03	20 °C	Test data	
Decomposition temperature	No data available			
Auto-ignition temperature	>400 °C		Test data	1000.1 - 1014 hPa
Explosive properties		no chemical group associated with explosive properties		
Oxidising properties		no chemical group associated with		

		oxidising properties		
pH	6.5 - 7.5		50 %	

Physical hazards
No physical hazard class

Other information :

Specific conductivity	4.400 µS/m	
Surface tension	0.0716 N/m	21.5 °C
Relative density saturated vapour/air mixture	1.0	

10. Stability and reactivity

Reactivity :
Temperature above flashpoint: higher fire/explosion hazard.

Chemical stability :
Hygroscopic.

Possibility of hazardous reactions :
Reacts violently with (strong) oxidizers: (increased) risk of fire. Violent to explosive reaction with (strong) acids.

Conditions to avoid :
Keep away from naked flames/heat. At temp>flashpoint: use spark-/explosionproof appliances. Finely divided: spark- and explosionproof
appliances. Finely divided: keep away from ignition sources/sparks.

Incompatible materials :
Oxidizing agents, reducing agents, (strong) acids, water/moisture.

Hazardous decomposition products :
Upon combustion CO and CO2 are formed.

11. Toxicological information

Information on toxicological effects :
Test results

- Toxicokinetics : summary
Oral absorption: Toxicokinetic behavior of monopropylene glycol and its structural homologue tripropylene glycol upon oral administration to rats was investigated in a well-conducted and well-reported study (The Dow Chemical Company, 1995). In this study, two groups of 5 male rats were administered a single oral dose of either radiolabeled (14C) tripropylene glycol or non-radiolabeled monopropylene glycol by gavage in water at target concentrations 40 mg/kg bw and 50 mg/kg bw, respectively. The excreta were collected for ca. 24 hours postdosing. After sacrifice 24 hours post-dosing the remaining radioactivity in tissues was determined for the first group and urine was analyzed for free and acid-abile conjugates of mono-, di- and tripropylene glycol for both groups. While the absorption of monopropylene glycol has not been specifically investigated in the study , the data on tripropylene glycol indicate that it is rapidly adsorbed if administered by gavage , based on the average recovery of ca. 91% of the 14C label administered from excreta, CO2, skin, tissues and carcass after ca. 24 hours postdosing sacrifice. The absorption of tripropylene glycol via oral route was calculated to amount to at least 86%, based on 5% of the administered dose recovered in faeces. As monopropylene glycol has a significantly lower molecular weight, its absorption from the gut is expected to occur even faster. Toxicokinetic behavior of monopropylene glycol in humans and experimental animals was also evaluated by the NTP CERHR expert panel (National Toxicology Program, 2004a), which concluded that available data indicate rapid and extensive absorption. Therefore a value of 100% for oral absorption shall be used for risk assessment for monopropylene glycol.

Distribution: No data on the distribution of monopropylene glycol were reported in the study ; however, in case of tripropylene glycol, approximately 10% of the radiolabeled dose was recovered in tissues and carcass , with the liver and kidney having the greatest amount of radiolabel per gram of tissue 24 hours after dosing (ca. 0.2 and 0.1%, respectively). The 14C concentration in blood was approximately 6.4 and 2.8 - fold lower than in liver and kidney, respectively. The expert panel of NTP CERHR (National Toxicology Program, 2004a) concluded that monopropylene glycol is rapidly distributed into total body water.

Metabolism and excretion: In the study with rats administered monopropylene glycol and radiolabeled monopropylene glycol, the data on the animals indicate that approximately 11% of the monopropylene glycol administered was recovered in the urine as free monopropylene glycol (with < 1% of the dose recovered as acid-labile conjugates). In the study with radiolabeld tripropylene glycol, twenty-four hours after administration of a single oral dose of 40 mg/kg bw to male rats, only 5.8% of the dose was recovered as unmetabolized parent compound in the urine, while 7.2% was recovered as acid-labile conjugates of tripropylene glycol, 5.1% and 3.3% as free and acid-labile conjugates of dipropylene glycol and 3.3% and 0.6% as free and acid-labile conjugates of monopropylene glycol, respectively. A large fraction (21%) of the 14C-tripropylene glycol dose was catabolized all the way to 14CO2, indicating considerable breakdown of tripropylene glycol. According to the NTP CERHR expert
panel report (National Toxicology Program, 2004a), the rate-determining step in the metabolism is alcohol dehydrogenase which, when saturated, switches from a first order process into a zero order process. Saturation of metabolism appears to occur in rats and rabbits at a dose of about 1600 to 2000 mg/kg bw, whereas in humans this seems to happen at a dose of about 200 mg/kg bw. In accordance with a zero order process, the half-life of monopropylene glycol in humans and rats increases from about 1.5 hours to more than 5 hours with increasing doses above metabolic saturation. By a NAD-dependent reaction, alcohol dehydrogenase converts monopropylene glycol to lactaldehyde, which is further metabolized to lactate.

Since monopropylene glycol has a chiral center, technical grade monopropylene glycol results in the formation of 50/50 D, L-lactate. L-lactate is indistinguishable from endogenous lactate, which is a good substrate for gluconeogenesis. D-lactate is less readily converted to glucose than Llactate, which prolongs its half-life leading, under conditions of prolonged exposure, to D-lactic acidosis. It is difficult to cause L-lactic acidosis even with very high doses of monopropylene glycol because of its efficient detoxification via gluconeogenesis. The second reason for lack of development of L-lactic acidosis is the saturation of alcohol dehydrogenase, which results in a constant rate of lactate production. Due to removal of L-lactate by gluconeogenesis, a further increase in lactate levels is not possible after saturation of metabolism. The excretion of
monopropylene glycol is species-dependent. Humans clear about 45% of monopropylene glycol via kidney, and in dogs, up to 88%. In rats and rabbits, very little of the parent compound is excreted by the kidney until saturation of metabolism occurs. Inhibition of alcohol dehydrogenase by pyrazole increases urinary excretion of monopropylene glycol to 75% in rats, as expected. Since monopropylene glycol has very low intrinsic toxicity, saturation of metabolism plays a protective role in its toxicity since the conversion of monopropylene glycol to the more toxic lactate (particularly D-lactate) is slowed.

Inhalation route of exposure: Only limited data addressing the absorption of monopropylene glycol by inhalation are available. Bau et al. (1971) reported that less than 5% of a technetium-labeled aerosol containing 10% monopropylene glycol in deionized water was taken up by human volunteers after inhalation for 1 hour in a mist tent. The authors measured the aerosol mass median diameter to be 4.8 -5.4 microns, a size small enough to have enabled penetration to the deep lung. Ninety percent of the dose was found in the nasopharynx and it rapidly entered the stomach with very little entering the lungs. Monopropylene glycol was not directly measured, not allowing the determination of absorption through the nasal mucosa. However, the low dose rate from inhalation exposure and the small surface area would not lead to significant
absorption of monopropylene glycol

Dermal route of exposure: An in vitro skin penetration study (EI du Pont de Nemours and Company, 2007) with the monopropylene glycol using human cadaver skin and performed under infinite dose conditions, was available for assessment. A nominal dose of 1200 µL/cm2 (ca. 1.2 g/cm2) of the neat substance was applied for 24 hours under occlusive conditions to 6 skin replicates representing 5 human subjects. By the conclusion of the 24-hour exposure interval, only a negligible portion of the applied dose of neat monopropylene glycol (0.14%) had penetrated through the skin into the receptor fluid. The integrity of human skin, as determined by electrical impendance (EI), was affected by continuous exposure to monopropylene glycol under occlusive conditions. The ratio of the post-EI values was 0.33, confirming that the barrier properties of the stratum corneum were altered by monopropylene glycol.

In general, monopropylene glycol was detected in receptor fluid within about an hour of application (lag time ~ 6 hours); steady-state penetration, which was represented by no less than 4 data points, was determined to be 95.4 µg/cm2/h (r2]0.999). This represents the maximum flux for neat monopropylene glycol. Based on the slope at steady-state (95.4 µg/cm2/h) and the concentration of monopropylene glycol in the applied solution, taken as its density (1,036,000 µg/cm3), the permeability coefficient for neat monopropylene glycol calculated to be 9.21×10-5cm/h. Based on the results of the study, a value of 40% for dermal absorption has been chosen by expert judgment to be used in the risk assessment. This value has been chosen as an average value between the percentage of dermal absorption obtained in the study and the maximal oral absorption (corresponding to 100%), and is considered to represent a worst-case approach.

Acute toxicity
propane-1,2-diol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determinatio

							n
Oral	LD50	Equivalent or similar to OECD 401	22000 mg/kg bw	-	Rat	Male/female	Experimental value
Dermal	LD50	Equivalent or similar to OECD 402	>2000 mg/kg bw	24 h	Rabbit		Experimental value
Inhalation	LC50	Equivalent or similar to OECD 403	317042 mg/l	2 h	Rabbit		Experimental value

Corrosion/irritation

propane-1,2-diol

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Not irritating	OECD 405	-	24; 48; 72 hours	Rabbit	Experimental value
Dermal	Not irritating	OECD 404	-	24; 48; 72 hours	Rabbit	Experimental value
Dermal	Slightly irritating	Patch test	24 h	24 hours	Human	Experimental value
Inhalation	No data available					

Respiratory or skin sensitisation

propane-1,2-diol

Route of exposure	Result	Method	Exposure time	Observation time	Species	Gender	Value determination
Dermal	Not sensitizing	OECD 429	-		Mouse		Experimental value
Dermal	Not sensitizing	Patch test	24 h	24 hours	Human	Male/female	Experimental value
Inhalation	Not relevant, expert judgement						

Specific target organ toxicity

propane-1,2-diol

Route of exposure	Result	Method	Value	Organ	Effect	Exposure time	Observation time	Species	Gender	Value determination
Dermal	NOAEL	Other	1700 mg/kg bw/day		No effect	102 weeks (daily, 5 days/week)	Rat	Male/female		Experimental value
Dermal	NOAEL	Other	0.02 ml (twice a week)		No effect	10 weeks (daily, 5 days/week)	Mouse	Female		Experimental value
Inhalation	LOAEC	Other	160 mg/m³	Nose	No effect	90 days	Rat	Male/female		Experimental value

Mutagenicity (in vitro)

propane-1,2-diol

Result	Method	Test substrate	Effect	Value determination

Negative	Other	Bacteria (S.typhimurium)		Experimental value
Negative	OECD 473	Human lymphocytes		Experimental value

Mutagenicity (in vivo)

propane-1,2-diol

Result	Method	Exposure time	Testsubstrate	Gender	Organ	Value determination
Negative	Other		Rat	Male		Experimental value

Carcinogenicity

propane-1,2-diol

Route of Organ Effect exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination	Organ	Effect
Inhalation	NOAEC	Other	>350 mg/m³ air	18 month(s)	Rat	Male/female	Experimental value		No effect
Dermal	NOAEL	Other	0.02		Mouse	Female	Experimental value		No effect
Oral	NOAEL	Other	1700 mg/kg bw/day	2 year(s)	Rat	Male/female	Experimental value		No effect
Oral	NOAEL	Other	3040 mg/kg bw/day	105 week(s)	Rat	Male/female			No effect
Oral	NOAEL	Other	2390 mg/kg bw/day	105 week(s)	Mouse	Male/female			No effect

Reproductive toxicity

propane-1,2-diol

	Parameter	Method	Value	Exposure time	Species	Gender	Effect	Organ	Value determination
Effects on fertility	NOAEL	OECD 416	10100 mg/kg bw/day		Mouse	Male/female	No effect		Experimental value
Developmental toxicity	NOAEL	Equivalent or similar to OECD 414	10400 mg/kg bw/day	9 days	Mouse	Male/female	No effect		Experimental value

Toxicity other effects

propane-1,2-diol
No data available

Conclusion
Low acute toxicity by the oral route
Low acute toxicity by the dermal route
Low acute toxicity by the inhalation route
Not classified as irritating to the skin
Not classified as irritating to the eye
Not sensitizing for skin
No respiratory sensitization data available
Low sub-chronic toxicity by the oral route
Low sub-chronic toxicity by the dermal route
Low sub-chronic toxicity by inhalation route
Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity (negative result)
Not classified for reprotoxic or developmental toxicity

Other information

propane-1,2-diol
No data available

12. Ecological information

Toxicity:

propane-1,2-diol

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determinati
Acute toxicity fish	LC50	Other	40613 mg/l	96 h	ONCORHYNCH US MYKISS	STATIC SYSTEM	FRESH WATER	Experimental value
Acute toxicity invertebrates	LC50	EPA 600/4-90/027	18340 mg/l	48 h	CERIODAPHNI A DUBIA	STATIC SYSTEM	FRESH WATER	Experimental value
Acute toxicity invertebrates	LC50	FIFRA 72-3	18800 mg/l	96 h	Americamysis bahia	STATIC SYSTEM	SALT WATER	Experimental value
Threshold limit algae	EC50	OECD 201	19000 mg/l	96 h	Pseudokirchn erella subcapitata	STATIC SYSTEM	FRESH WATER	Experimental value
Threshold limit algae	EC50	OECD 201	19100 mg/l	96 h	SKELETONEMA COSTATUM	STATIC SYSTEM	SALT WATER	Experimental value
Long-term toxicity fish	ChV	ECOSAR	2500 mg/l	30 days			FRESH WATER	Experimental value
Long-term toxicity aquatic invertebrates	NOEC	EPA 600/4-89/001	13020 mg/l	7 days	CERIODAPHNI A SP.	Semi-static	FRESH WATER	Experimental value
Toxicity aquatic micro-organisms	NOEC	Other	20000 mg/l	18 days	PSEUDOMONAS PUTIDA		FRESH WATER	Experimental value
Toxicity sediment organisms	LC50	Other	6983 mg/l	10 days	Corophium volutator	STATIC SYSTEM	SALT WATER	Experimental value

Conclusion
Not harmful to fishes (LC50(96h) >1000 mg/l)
Not harmful to invertebrates (EC50 (48h) > 1000 mg/l)
Not harmful to algae (EC50 (72h) >1000 mg/l)
Not harmful to bacteria (EC50 >1000 mg/l)

Persistence and degradability :

Biodegradation water

Method	Value	Duration	Value determination
OECD 301F: Manometric Respirometry Test	81.7 %	28 days	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination

AOPWIN v1.92	0.83 days	1.5x10^6 /cm³	QSAR

Phototransformation water (DT50 water)

Method	Value	Conc. OH-radicals	Value determination
Other	2.3 year(s)		Calculated value

Biodegradation soil

Metho	Value	Duration	Value determination
Other	98 %	105 days	Experimental value

Conclusion
Readily biodegradable in water
Photodegradation in water occurs slowly
Biodegradable in the soil under anaerobic conditions

Bioaccumulative potential :

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		0.09			Calculated value

BCF other aquatic organisms
No data available

Log Pow

Method	Value	Temperature	Value determination
Equivalent or similar to OECD 107	-1.07	20.5 °C	Test data

Conclusion
Bioaccumulation: not applicable

Mobility in soil :

Log Pow

Method	Value	Temperature	Value determination
Equivalent or similar to OECD 107	-1.07	20.5 °C	Test data

Mobility soil (log Poc)
No data available

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
0.00566 atm m³/ mol	EUSES calculation	12 °C		ESTIMATED VALUE

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay Level III	2.98 %		0.07 %	48.1 %	48.8 %	Calculated value

Volatile organic compounds (VOC)	100 %
Surface tension	(21.5 °C) 0.0716 N/m

Conclusion
Slightly volatile
Soluble in water
Low potential for absorption in soil

Results of PBT and vPvB assessment :

Substance does not meet the screening criteria for persistency nor bioaccumulation so is neither PBT nor vPvB .

Other adverse effects :

Global Warming Potential (GWP)
No data available

Ozone-depleting potential (ODP)
No data available

Ozone layer	Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009)
Surface water	Mild water pollutant (surface water)
Ground water	Ground water pollutant
Air contamination	Low potential for volatization from water surface

13. Disposal considerations

Waste treatment methods :

Provisions relating to waste
Waste material code (Directive 2008/98/EC, decision 2001/118/EC).
07 01 04* (other organic solvents, washing liquids and mother liquors).
16 01 14* (antifreeze fluids containing dangerous substances). Depending on branch of industry and production process, also other EURAL codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

Disposal methods
Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery . Remove waste in accordance with local and/or national regulations. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. In appropriate low concentrations inhibition of the degradation of activated sludge is not anticipated. Do not discharge into surface water.

Packaging/Container
Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

14. Transport information

ADR
UN number:

Transport	Not subject
UN number	-

UN proper shipping name:
Transport hazard class(es):

Hazard identification number	
Class	
Classification code	

Packing group:

Packing group	
Labels	

Environmental hazards:

Environmentally hazardous substance mark	no

Special precautions for user:

Special provisions	
Limited quantities	

RID
UN number:

Transport	Not subject
UN number	-

UN proper shipping name:
Transport hazard class(es):

Hazard identification number	
Class	
Classification code	

Packing group:

Packing group	
Labels	

Environmental hazards:

Environmentally hazardous substance mark	no

Special precautions for user:

Special provisions	
Limited quantities	

ADN

UN number	9003

UN proper shipping name:

Proper shipping name	SUBSTANCES HAVING A FLASH POINT ABOVE 60°C AND OF NOT MORE THAN 100 °C

Transport hazard class(es):

Class	9
Classification code	

Packing group:

Packing group	
Labels	none

Environmental hazards:

Environmentally hazardous substance mark	no

Special precautions for user:

Special provisions	
Limited quantities	

IMDG

UN number:

Transport	Not subject
UN number	-

UN proper shipping name:

Transport hazard class(es):

Class	

Packing group:

Packing group	
Labels	

Environmental hazards:

Marine pollutant	
Environmentally hazardous substance mark	no

Special precautions for user:

Special provisions	

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not applicable, based on available data	

ICAO-TI/IATA-DGR

UN number:

Transport	Not subject
UN number	-

UN proper shipping name:

Transport hazard class(es):

Class	

Packing group:

Packing group	
Labels	

Environmental hazards:

Environmentally hazardous substance mark	no

Special precautions for user:

Special provisions	

15. Regulatory information

Safety, health and environmental regulations /legislation specific for the substance or mixture :

European legislation :
REACH registration Substance is not classified as dangerous, so no exposure scenario's are available.

National legislation
- The Netherlands

Waterbezwaarlijkheid (for NL)	11
Waste identification other lists of waste materials	LWCA (the Netherlands): KGA category 03

- Germany

WGK	1	Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)
TA-Luft	propane-1,2-diol	TA-Luft Klasse 5.2.5

Chemical safety assessment :
A chemical safety assesment has been performed.

16. Other information

CLP
Not classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

DSD/DPD
Not classified as dangerous in compliance with Directive 67/548/EEC and/or Directive 1999/45/EC

Full text of any R -phrases referred to under headings 2 and 3:
Full text of any H -statements referred to under headings 2 and 3:
Full text of any classes referred to under headings 2 and 3:

(*) = INTERNAL CLASSIFICATION BY BIG
PBT-substances = persistent, bioaccumulative and toxic substances
DSD Dangerous Substance Directive
DPD Dangerous Preparation Directive
CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)